

35. (Amended) An isolated polynucleotide comprising a nucleotide sequence which encodes a polypeptide having the amino acid sequence of SEQ ID No. 6, 7, 8, 9, 11 or 14, said nucleotide sequence being derived from a ~~CHD~~ gene of a bird or a part thereof, said polynucleotide being hybridizable to the genomic DNA of a bird.

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36. (Amended) A fragment of the polynucleotide according to claim 34, which gives a specific signal only on the W chromosome upon hybridisation to the genomic DNA of a non-ratite bird.

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37. (Amended) A fragment of the polynucleotide according to claim 35, which gives a specific signal only on the W chromosome upon hybridisation to the genomic DNA of a non-ratite bird.

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38. (Unamended) The fragment according to claim 36, which is obtained by restriction endonuclease digestion.

39. (Unamended) The fragment according to claim 37, which is obtained by restriction endonuclease digestion.

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40. (Amended) The fragment according to claim 36, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck and parrot.

41. (Amended) The fragment according to claim 37, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck and parrot.

Sub FO 42. (Amended) An isolated polynucleotide which hybridises under moderate to high stringency conditions to the polynucleotide according to claim 34.

43. (Amended) An isolated polynucleotide which hybridises under moderate to high stringency conditions to the polynucleotide according to claim 35.

D 2 amended 44. (Amended) The polynucleotide according to claim 42, which gives a specific signal only on the W chromosome upon hybridisation to the genomic DNA of a non-ratite bird.

45. (Amended) The polynucleotide according to claim 43, which gives a specific signal only on the W chromosome upon hybridisation to the genomic DNA of a non-ratite bird.

46. (Amended) The polynucleotide according to claim 44, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck and parrot.

47. (Amended) The polynucleotide according to claim 45, wherein the non-ratite bird is selected from the group consisting of chicken, turkey, duck and parrot

48. (Amended) A method for determining the sex of a non-ratite bird or of an embryo, fetus, cell or tissue of a non-ratite bird, which comprises:

hybridising under moderate to high stringency conditions the polynucleotide according to claim 34 or 35 with either

(a) a DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof or,

(b) a cDNA reverse transcribed from RNA of the non-ratite bird, embryo, fetus,

cell or tissue thereof, or

(c) a cDNA or DNA amplified by cloning or polymerase chain reaction from DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof, and

detecting the presence or absence of hybridisation of the polynucleotide to (a), (b) or (c), which result is indicative of the sex of the non-ratite bird, embryo, fetus, cell or tissue thereof.

49. (Amended) A method for determining the sex of a non-ratite bird or of an embryo, fetus, cell or tissue of a non-ratite bird, which comprises:

hybridising under moderate to high stringency conditions the polynucleotide according to claim 42 or 43 with either

(a) a DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof or,

(b) a cDNA reverse transcribed from RNA of the non-ratite bird, embryo, fetus,

cell or tissue thereof, or

(c) a cDNA or DNA amplified by cloning or polymerase chain reaction from DNA or RNA of the non-ratite bird, embryo, fetus, cell or tissue thereof, and

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detecting the presence or absence of hybridisation of the polynucleotide to (a), (b) or (c),
which result is indicative of the sex of the non-ratite bird, embryo, fetus, cell or tissue thereof.

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50. (Amended) An avian CHD-protein, fragment thereof or a polypeptide comprising a product of the CHD-gene or part thereof, or a CHD-mimotope protein, fragment thereof or a CHD-mimotope polypeptide which is derived or derivable from the polynucleotide of claim 34 or 35.

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51. (Amended) A protein or fragment thereof or polypeptide comprising a CHD-chromobox which is derived or derivable from the polynucleotide of claim 34 or claim 35, having at least one of the characteristic amino acid residues at position 11, 12, 20, 27 or 31 inside the chromobox of 3, 6, 8, 12-15 or 16 directly downstream of the chromobox when aligned to best effect to the sequences of SEQ ID No. 22-30.

52. (Amended) A CHD-protein or fragment thereof or a polypeptide encoded by a nucleic acid or fragment or oligonucleotide according to the isolated polynucleotide of claim 34 or 35, and comprising a CHD-chromobox.

N.E.

53. (Unamended) An antibody or fragment thereof which specifically binds to the avian CHD-protein of claim 50.